State of Michigan
Department of Environmental Quality

Land and Water Management Division
7953 Adobe Road
Kalamazoo MI, 49009-5026
269-567-3500

File No. 07-03-0039-P

Date: July 13, 2007

PUBLIC NOTICE

Otsego Paper, Inc., 320 North Farmer Street, Otsego, Michigan, 49078, has applied to this office for a permit under authority of Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The applicant proposes to excavate, fill, and riprap along approximately 2400 linear feet of the bank and within the 100 year floodplain of the Kalamazoo River at 320 N. Farmer Street. The purpose of the project is to provide bank stabilization per the Baseline Environmental Assessment. Excavation activities include the clearing and grubbing of approximately 800 cubic yards of material from approximately 2400 feet of riverbank and excavating approximately 950 cubic yards to reshape the bank for a total of 1750 cubic yards of excavated spoils. Dredging is not proposed with this project. Spoils will be placed onsite. Fill activities along 2400 feet of riverbank include bank reshaping of 950 cubic yards; the placement of 800 cubic yards geocell material, planted with appropriate seed mix; and rip-rap installation of 1900 cubic yards at the toe of the riverbank, 1400 cubic yards of which will be below the ordinary high water mark; for a total of 3650 cubic yards of fill. A run-off control berm will be constructed, with materials brought in from offsite, along 2800 linear feet at the top of the bank above the 100-year floodplain. A total of approximately 2,850 cubic yards (includes 950 cubic yards of bank reshaping) of fill below the 100 year floodplain is proposed without compensating cut. During geocell installation approximately 144 cubic yards of spoils will be removed and 144 cubic yards of fill will be placed in 0.27 acres of wetland. Mitigation is not proposed. The project is located in T1N, R12W, Section 23 , City of Otsego, Allegan County, Michigan, in accordance with plans attached to this notice.

THIS NOTICE IS NOT A PERMIT

The proposed project may also be regulated by one or more additional parts of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, that are administered by the Land and Water Management Division (LWMD). The requirements of applicable parts are considered in determining if it is in the public interest to issue a permit.

When a permit application is received requesting authorization to work in or over the inland waters of the State of Michigan, pursuant to PART 301, INLAND LAKES AND STREAMS, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED, the Act provides that the department submit copies for review to the department of public health, the city, village or township, and the county where the project is to be located the local soil conservation district, any local watershed council organized under Part 311, and the local port commission. Additional notification is provided to certain persons as required by statute or determined by the department.

Those persons wanting to make comments on the proposed project shall furnish this office with their written comments no later than 20 days from the date of this notice. Written comments will be made part of the record and should reference the above file number. Objections must be factual, specific, and fully describe the reasons upon which any objection is founded. Unless a written request is filed with the department within the 20-day public comment period, the department may make a decision on the application without a public hearing. The determination as to whether a permit will be issued or a public hearing held will be based on evaluation of all relevant factors defined in Sections 30106 and 30311, or permit criteria defined by other appropriate Parts of the NREPA. These Sections address the effect of the proposed work on the public trust or interest including navigation, fish, wildlife, and water quality among other criteria. Public comments received will also be considered.

cc: DEQ, RRD, Lansing, Superfund
DNR, Wildlife-Plainwell
Allegar Co. Clerk
Allegar Co. Drain Comm.
(US Gypsum) Otsego Paper, Inc., applicant
LWMD Floodplains-Kalamazoo
ERM, Inc.
DNR, Fisheries-Plainwell
Allegan Co. Health Dept.
City of Otsego Clerk
Allegan Soil Conservation Dist.
History Division
USACE
see file for adjacent property owners

US Army Corps of Engineers (USACE) | Michigan Department of Environmental Quality (MDEQ) DEQ

AGENCY USE

Previous USACE Permit or File Number

USACE File Number

Kalamazoo- B. Zimont

Date Received: RECEIVED MAY 25 2007 MDEQ/LWMD PERMIT CONSOLIDATION UNIT

Land and Water Management Division, MDEQ File Number: 07-03-0035-P

Marina Operating Permit Number

Fee received $ 500 cc 1500 Mail Via Check

AGENCY USE

- Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

- Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address	Township Name(s)	Township(s)	Range(s)	Section(s)
320 N. Farmer Street	Otsego	T1N	R12W	23

City/Village	County(ies)	Property Tax Identification Number(s)
Otsego	Allegan	See Attachment (Exhibit A)

Name of Waterbody	Project Name or Job Number	Subdivision/Plat	Lot Number	Private Claim
Kalamazoo River	Geocell Installation			

Project types (check all that apply): ☐ private ☐ public/government ☐ industrial ☒ commercial ☐ multi-family ☐ building addition ☐ new building or *structure* ☐ building renovation or restoration ☐ river restoration ☐ single-family ☒ other (explain) *Installation of Geocell slope stabilization technology per Baseline Env. Assessment Report*

The proposed project is on, within, or involves (check all that apply)

☐ a stream ☐ a pond (less than 5 acres) ☒ a legally established County Drain (date established) (M/D/Y) / /
☒ a river ☐ a channel/canal ☐ a Great Lake or *Section 10 Waters* ☐ a *natural river* ☐ a new marina
☐ a ditch or drain ☐ an *inland lake* (5 acres or more) ☐ a designated *high risk erosion area* ☐ a *dam* ☐ a *structure* removal
☒ a *floodway* area ☒ a *100-year floodplain* ☐ a designated *critical dune area* ☒ a wetland ☐ a utility crossing
☐ a designated *environmental area* ☒ 500 feet of an existing waterbody

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

- Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

See project description, associated activities, and construction sequence in documents presented in Attachment B

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

- The applicant can be either the property owner or the person or company that proposes to undertake the activity.
- If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

Applicant (individual or corporate name)	Agent/Contractor (firm name and contact person)
Otsego Paper, Inc	ERM, Inc Attn: Mike Beck
Mailing Address: 320 N. Farmer Street	Address: 3352 128th Avenue
City: Otsego State: Michigan Zip Code: 49078	City: Holland State: MI Zip Code: 49424
Daytime Phone Number with Area Code: 269-692-6417 Cell Phone Number: 732-770-9413	Daytime Phone Number with Area Code: 616-738-7320 Cell Phone Number: 616-283-7156
Fax: 269-692-2060 E-mail: HKrell@usg.com	Fax: 616-399-3777 E-mail: mike.beck@erm.com

Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? ☐ No ☒ Yes

If No provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right-of-ways. If multiple owners, attach all property owners' names, mailing addresses, and telephone numbers. Disclose any DEQ conservation easements or other easements, deed restrictions, leases, or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided.

Property Owner's Name (if different from applicant)	Mailing Address
Daytime Phone Number with Area Code - - Cell Phone Number - -	City State Zip Code

4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use.
- Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative construction technologies; alternative project layout and design; alternative locations; local land use regulations and infrastructure; and pertinent environmental and resource issues.
- For utility crossings, include both alternative routes and alternative construction methods.

This application is to implement recommendations from the BEA Report for the required installation of engineering controls/isolation barrier (for riverborne contamination potentially affecting the site) per site BEA report recommendations. This will be by geocell bank stabilization and berm at top of bank. Further information is included in Attachment B

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
- Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.
- Project area must be staked at the time of application submittal.

Is there an access road to the project? ☐ No ☒ Yes (If Yes, type of road, check all that apply) ☒ private ☐ public ☐ improved ☐ unimproved

Name of roads at closest main intersection *Farmer Street* and *River Street/106th Avenue*

Directions from main intersection *South on Farmer St. to main gate of the facility, use phone at gate to call security*

Style of house or other building on site ☐ ranch ☐ 2-story ☐ cape cod ☐ bi-level ☐ cottage/cabin ☐ pole barn ☐ none ☒ other (describe) *papermill and offices*

Color Color of adjacent property house and/or buildings

House number Address is visible on ☐ house ☐ garage ☐ mailbox ☐ sign ☐ other (describe)

Street name *Farmer Street* Fire lane number Lot number

How can your site be identified if there is no visible address? *Large structure just north of the Kalamazoo river, on the east side of Farmer Street*

Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody *Site is visible when facing northeast from Farmer Street bridge over the Kalamazoo River*

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)

☐ No ☒ Yes (If Yes, list jurisdiction names.) *Site crosses from City of Otsego to Township of Otsego at eastern most end of property*

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial
Allegan Co Health Dept	*Part91, SESC*		*Not submitted yet*		

7 If a permit is issued, date activity will commence (M/D/Y) *June/15/2007* Proposed completion date (M/D/Y) *Oct/30/2007*

Has any construction activity commenced or been completed in a regulated area? ☒ No ☐ Yes
If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s) (M/D/Y) / /

Were the regulated activities conducted under a MDEQ permit? ☐ No ☐ Yes
If Yes, list the MDEQ permit number

Are you aware of any unresolved violations of environmental law or litigation involving the property? ☒ No ☐ Yes (If Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all *adjacent and impacted property owners* and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name	Mailing Address	City	State	Zip Code
See Attached Sheet of adjacent property owners from wastewater permit application				

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Name of ☐ Established Lake Board ☐ or Lake Association and the Contact Person's name, phone number, and mailing address

9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State *Coastal Zone Management Program* and the *National Flood Insurance Program*. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

Revised

US Army Corps of Engineers (USACE) **Michigan Department of Environmental Quality (MDEQ)** DEQ

- All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.
- Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
- Your application will not be processed if the application form is not completely filled out.
- List here the application page numbers being submitted and a brief description of other attachments included with your application. *Application Sections 1-10, 12, 13); cover letter; check; project narrative summary, engineering drawings;site vicinity map site plans and profile views; site photographs; wetland delineation report; authorization letter, and river modeling study/hydrology report.*
- Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
- A letter of authorization from the owner must be included if not signed below by the owner.

☐ Property Owner ☒ Agent Contractor ☐ Corporation – Title	Printed Name *Mike Beck*	Signature Mike Beck	Date (M/D/Y) 7/9/07

10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
- If your project may affect wetlands also complete Section 12. If your project may impact regulated *floodplains*, also complete Section 13.
- Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing *structures*; and the location of all proposed *structures*, land change activities and *soil erosion and sedimentation control measures*. Review sample drawings for guidance in completing site-specific drawings for your project.
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
- On a Great Lake use IGLD 85 ☐ surveyed ☐ converted from observed still water elevation. On inland waters, ☐ NGVD 29 ☐ local datum ☒ other *USGS*
- Observed water elevation (ft) , date of observation (M/D/Y) / /

☒ **A. PROJECTS REQUIRING FILL** (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average fill dimensions.

(Check all that apply) ☒ *floodplain* fill ☒ wetland fill ☒ *riprap* ☐ *seawall, bulkhead*, or *revetment* ☐ bridge or culvert
☐ boat launch ☐ off-shore swim area ☐ beach sanding ☐ boatwell ☐ crib *dock* ☐ other

Fill dimensions (ft) Length *2400* width *approx 10* maximum depth *approx 2*	Total fill volume (cu yd) *3650 [800 (geocell), 950 bank shaping, 1900 (rip rap)]*	Maximum water depth in fill area (ft) *0 to 5 (rip rap)*

Type of clean fill ☐ pea stone ☒ sand ☐ gravel ☐ wood chips ☒ other *rip rap*

Will *filter fabric* be used under proposed fill? ☐ No ☒ Yes (If Yes, type) *Geotextile*

Source of clean fill ☐ on-site, If on-site, show location on site plan ☒ commercial ☐ other, If other, attach description of location

Fill will extend *varies* feet into the water from the *shoreline* and *upland* *varies* feet out of the water.

Fill volume below OHWM (cu yd) *1400*

☒ **B. PROJECTS REQUIRING DREDGING OR EXCAVATION** (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average dredge or excavation dimensions.
- The applicant will be notified if sediment sampling is required.

(Check all that apply) ☒ *floodplain* excavation ☐ wetland dredge or draining ☐ *seawall, bulkhead, or revetment*
☐ navigation ☐ *boat well* ☐ boat launch ☒ other

Total dredge/excavation volume (cu yd) *1750*	Dimensions length *varies* width *varies* depth *varies - see drawings*	Dredge/excavation volume below OHWM (cu yd) *0*	Method and equipment for dredging *CAT 345 excavator (clear and grub, shape bank)*

Has proposed dredge material been tested for contaminants? ☒ No ☐ Yes (If Yes, attach testing results)

Will dredged or excavated spoils be placed ☒ on-site ☐ off-site. Attach a detailed disposal area site plan, location map. If dispose off site, provide address and letter of authorization.

Has this same area been previously dredged? ☒ No ☐ Yes (If Yes, provide date and permit number, if available) / / /
If Yes, are you proposing to enlarge the previously dredged area ☒ No ☐ Yes

Is long-term maintenance dredging planned? ☐ No ☐ Yes (If Yes, when and how much?)

☒ **C. PROJECTS REQUIRING RIPRAP** (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the ☐ shoreline OR ☒ *ordinary high water mark*	Dimensions (ft) length *varies* width *varies* depth *varies -*	Volume(cu yd) *1500*
Riprap landward of the ☐ *shoreline* OR ☒ *ordinary high water mark*	Dimensions length *varies* width *varies* depth *varies*	Volume(cu yd) *400*

Type of *riprap* ☐ field stone ☐ angular rock ☒ other *6 to 12 inch diameter stone*

Will *filter fabric* be used under proposed *riprap*? ☐ No ☒ Yes (If Yes, type)

☐ **D. SHORE PROTECTION PROJECTS** (See Sample Drawings 2, 3, and 17)

(check all that apply) ☐ *riprap* – length (ft.) ☐ *seawall/bulkhead* – length (ft.) ☐ *revetment* – length (ft.) Distances of project from both property lines (ft)

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☐ **E. DOCK - PIER – MOORING PILINGS** (See Sample Drawing 10)

Type ☐ open pile ☐ filled ☐ crib — *Seasonal structure*? ☐ No ☐ Yes

Proposed *structure* dimensions (ft) length width — Dimensions of nearest adjacent *structures* (ft) length width

☐ **F. BOAT WELL** (No Sample Drawing available)

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US Army Corps of Engineers (USACE) Michigan Department of Environmental Quality (MDEQ) DEQ

Type of bank stabilization ☐ wood ☐ steel ☐ concrete ☐ vinyl ☐ *riprap* ☐ other

Boat well dimensions (ft) Length width depth	Number of boats
Volume of backfill behind sidewall stabilization (cu yd)	Distances of *boat well* from adjacent property lines (ft)

☐ **G. BOAT LAUNCH** (No Sample Drawing available) (check all that apply) ☐ new ☐ existing ☐ public ☐ private ☐ commercial ☐ replacement

Proposed overall boat launch dimensions (ft) length width depth	Type of material ☐ concrete ☐ wood ☐ stone ☐ other
Existing overall boat launch dimensions (ft) Length width depth	Boat launch dimensions (ft) below *ordinary high water mark* Length width depth

Distances of launch from both property lines (ft)	Number of skid *piers*	Skid *pier* dimensions (ft) width length

☐ **H. BOAT HOIST** (No Sample Drawing available)

(Check all that apply) ☐ *seasonal* ☐ permanent ☐ cradle ☐ side lifter ☐ other — located on ☐ *seawall* ☐ *dock* ☐ bottomlands

☐ **I. BOARDWALKS AND DECKS IN** ☐ **WETLANDS - OR -** ☐ **FLOODPLAINS** (See Sample Drawings 5 and 6. Provide table if necessary)

(Check all that apply) ☐ boardwalk ☐ deck — Boardwalk or deck is on ☐ fill ☐ *piling* — Dimensions (ft) length width

10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

☐ **J. INTAKE PIPES** (See Sample Drawing 16) ☐ **OUTLET PIPES** (See Sample Drawing 22)

Type ☐ headwall ☐ end section ☐ pipe ☐ other	If outlet pipe, discharge is to ☐ wetland ☐ *inland lake* ☐ stream, drain, or river ☐ Great Lake ☐ other

Dimensions of headwall OR end section (ft) length width depth	Number of pipes	Pipe diameters and invert elevations

☐ **K. MOORING AND NAVIGATION BUOYS** (No Sample Drawing available)

- Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet.
- Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Number of buoys	Type of anchor system	Purpose of buoy ☐ mooring ☐ navigation ☐ swimming
Dimensions of buoys (ft) width height	Do you own the property along the *shoreline*? ☐ No ☐ Yes If No, you must provide an authorization letter from the property owner(s)	

☐ **L. GROINS** (No Sample Drawing available)

- Provide an overall site plan showing the distances (ft) of the outermost *groins* from the property lines, distances between *groins*, length and width of each *groin*, and the distance from the existing toe of the bluff to the lakeward end of the *groins*.
- If existing *groins* are located on adjacent properties, provide distances (ft) from closest neighboring *groin* to your property lines on the site plan. Provide *cross-section* views showing the length and height of each *groin* and the height of *groin* ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level.

Number of *groins*	Type of *groin* ☐ steel ☐ wood ☐ other	Will *groin* be placed on a foundation? ☐ No ☐ Yes (If Yes, dimensions of foundation (ft)) length width height

☒ **M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS** (No Sample Drawing available)

- Provide an overall site plan showing the proposed fencing through wetlands, streams, or *floodplains*
- Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a *floodplain*).

(check all that apply) ☐ wetlands ☐ streams ☐ *floodplains*	Total length (ft) of fence through wetlands streams *floodplains*	Fence height (ft)	Fence type and material

☐ **N. OTHER** - e.g., *structure* removal, *marine railway*, *low sand trap wall*, *breakwater*, and structural foundations in wetlands or *floodplains*

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11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)

Which best describes your proposed waterbody use (check all that apply)
☐ wildlife ☐ *stormwater retention basin* ☐ *stormwater detention basin* ☐ recreation ☐ wastewater basin ☐ other

Water source for lake/pond
☐ groundwater ☐ natural springs ☐ *Inland Lake or Stream* ☐ stormwater runoff ☐ pump ☐ sewage ☐ other

Location Of the lake/basin/pond ☐ floodplain ☐ wetland ☐ upland

Will project involve construction of a *dam*, dike, outlet control *structure*, or *spillway*? ☐ No ☐ Yes (If Yes, complete Section 17)

12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)

- For information on the MDEQ's *Wetland Assessment* Program, visit the LWMD website or call 517-373-1170.

(check all that apply) ☒ fill (Section 10A) ☒ dredge or excavation (Section 10B) ☐ boardwalk or deck (Section 10I) ☐ dewatering ☐ fences (Section 10M) ☐ bridges and culverts (Section 14) ☐ draining surface water ☒ other *clear/grub, add geocell*

Has a professional wetland delineation been conducted for this parcel? ☐ No ☒ Yes (If Yes, provide a copy; if federal method was used, supply data sheets)	Applicant purchased property ☐ before OR ☒ after October 1, 1980.

Is there a recorded DEQ easement on the property? ☒ No ☐ Yes (If Yes, provide the number)

Has the MDEQ conducted a *wetland assessment* for this parcel? ☒ No ☐ Yes (If Yes, provide a copy)

Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted. *See wetland delineation report*

Is any grading or mechanized land clearing proposed? ☐ No ☒ Yes (If Yes, show locations on site plan)	Has any of the proposed grading or mechanized land clearing been completed? ☒ No ☐ Yes (If Yes, label and show locations on site

plan)

- Complete the wetland dredge and wetland fill dimension information for each impacted wetland area.
- Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical *cross-section* for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities.
- If dredge material will be disposed of on site, show the location on site plan in an *upland* area and include *soil erosion and sedimentation control measures.*

Wetland dredge dimensions	maximum length (ft)	maximum width (ft)	dredge area	average depth (ft)	dredge volume (cu yd)
Clear grub only	1600	15	☒ acres ☐ sq ft 0.27	0.33	144
Wetland fill dimensions	**maximum length (ft)**	**maximum width (ft)**	**fill area**	**average depth (ft)**	**fill volume (cu yd)**
Replace with geocell	1600	15	☒ acres ☐ sq ft 0.27	0.33	144

Total wetland dredge area ☒ acres ☐ sq ft 0.27	Total wetland dredge volume (cu yd) 144
Total wetland fill area ☒ acres ☐ sq ft 0.27	Total wetland fill volume (cu yd) 144

The proposed project will be serviced by ☒ public sewer ☐ private septic system (If septic system, show existing and new or expanded system on plans)	If septic system, has application been made to the County Health Department for a permit? ☐ No ☐ Yes	If Yes, has permit been issued? ☐ No ☐ Yes (If Yes, provide a copy)

13 FLOODPLAIN ACTIVITIES (See Sample Drawing 5. Others may apply.)

- Attach additional sheets with the requested information when multiple *floodplain* activities are included in this application.

(check all that apply) ☒ fill ☒ excavation ☒ other Clear, grub, shape bank, place Geocell along river bank per BEA

Site is approx 12 feet above ☐ *ordinary high water mark* (OHWM) OR ☒ observed water level. Date of observation (M/D/Y) April/16/2007

Fill volume below the 100-year floodplain elevation (cu yd) 2350 rip rap and reshaping	Compensating cut volume below the 100-year floodplain elevation (cu yd) none - based on hydraulic modeling

14 BRIDGES AND CULVERTS (Including Foot and Cart Bridges)

- Provide detailed site-specific drawings of existing and proposed *Plan View* (Sample Drawing 14A), Elevation View (Sample Drawing 14B), Stream and *Floodplain Cross-Section* (Sample Drawing 14C), Stream Profile (Sample Drawing 14D) and *Floodplain* Fill (Sample Drawing 5) at a scale adequate for detailed review.
- Provide the requested information that applies to your project. If there is not an existing *structure*, leave the "Existing" column blank.
- If you choose to have a Licensed Professional Engineer "certify" that your project will not cause a "*harmful interference*" for a range of flood discharges up to and including the 100-year flood discharge, then you must use the "Required Certification Language." You may request a copy by phone, email, or mail. A hydraulic report supporting this certification may also be required.
- Attach additional sheets with the requested information when multiple crossings are included in this application.

	Existing	Proposed		Existing	Proposed
Culvert type (box, circular, arch) and material (corrugated metal, timber, concrete, etc.)			Bridge span (length perpendicular to stream) OR culvert ☐ width ☐ diameter (ft)		
Bridge type (concrete box beam, timber, concrete I-beam, etc.)			Bridge width (parallel to stream) OR culvert length (ft)		
Entrance design (projecting, mitered, wingwalls, etc.)			Bridge *rise* (from bottom of beam to streambed) OR Culvert *rise* (from top of culvert to streambed) (ft)		
Total *structure waterway* opening *above streambed* (sq ft)					
☐ elevation of culvert crown / ☐ bottom of bridge beam (ft) — Upstream			Higher elevation of ☐ culvert invert OR ☐ streambed within culvert (ft) — Upstream		
Downstream			Downstream		
Elevation of road grade at *structure* (ft)			Distance from low point of road to mid-point of bridge crossing (ft)		
Elevation of low point in road (ft)					

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Cross-sectional area of primary channel (sq ft) (See Sample Drawing 14C)	Average stream width at OHWM outside the influence of the structure (ft)	Upstream / Downstream

Reference datum used (show on plans with description) ☐ *NGVD 29* ☐ *IGLD 85* (Great Lakes coastal areas) ☐ local

High water elevation – describe reference point and highest known water level above or below reference point and date of observation.

15 STREAM, RIVER, OR DRAIN CONSTRUCTION ACTIVITIES (No sample drawing available)

- Complete Section 10A for fill, Section 10B for dredge or excavation, and Section10C for *riprap* activities.
- If side casting or other proposed activities will impact wetlands or *floodplains*, complete Sections 12 and 13, respectively.
- Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing *structures*; and the location of all proposed *structures* and land change activities. Provide *cross-section* (elevation) drawings necessary to clearly show existing and proposed conditions. Be sure to indicate drawing scales.
- For activities on legally established county drains, provide original design and proposed dimensions and elevations.

(check all that apply) ☐ maintenance ☐ improvement ☐ relocation ☐ enclosure ☐ new drain ☐ wetlands ☐ other

Dimensions (ft) of existing stream/drain channel to be worked on. length *3200* width *10* depth *0-3*

Dimensions (ft) of new, relocated, or enclosed stream/drain channel.
length width depth

Volume of Dredge/ excavation (cu yds) ***soil will be mass balanced across length of the bank.***

Existing channel average water depth in a normal year (ft)

Proposed side *slopes* (vertical / horizontal) ***No greater than 2 feet horizontal to 1 feet vertical***

How will *slopes* and bottom be stabilized?
Geocell and geotextile

Will old/enclosed stream channel be backfilled to top of bank grade? ☒ No ☐ Yes

Length of channel to be abandoned (ft) *0*

Volume of fill (cu yds) *0*

If an enclosed *structure* is proposed, check type ☐ concrete ☐ corrugated metal ☐ plastic ☒ other ***Geocell membrane filled with sand and topsoil above the water line then seeded with native grasses***

Dimensions of the structure size length ***2400 feet*** volume of fill ***1900 CY***

Will spoils be disposed of on site? ☐ No ☒ Yes (If Yes, show location of spoils on site plan in an *upland* area.)

Reference datum used (show on plans with description) ☐ *NGVD 29* ☐ *IGLD 85* (Great Lakes coastal areas) ☐ local

16 DRAWDOWN OF AN IMPOUNDMENT

- If wetlands will be impacted, also complete Section 12.

Type of drawdown ☐ over winter ☐ temporary ☐ one-time event ☐ annual event ☐ permanent (*dam* removal) ☐ other

Reason for drawdown

Has there been a previous drawdown? ☐ No ☐ Yes (If Yes, provide date (M/D/Y) / /

Previous MDEQ permit number, if known

Does waterbody have established legal lake level? ☐ No ☐ Yes ☐ Not Sure

Dam ID Number, if known

Extent of vertical drawdown (ft)

Impoundment design head (ft)

Number of adjacent or impacted property owners

Date drawdown would start (M/D/Y) / /

Date drawdown would stop (M/D/Y) / /

Rate of drawdown (ft/day)

Date refilling would start (M/D/Y) / /

Date refill would end (M/D/Y) / /

Rate of refill (ft/day)

Type of outlet discharge *structure* to be used ☐ surface ☐ bottom ☐ mid-depth

Impoundment area at normal water level (acres)

Sediment depth behind *impoundment* discharge *structure* (ft)

17 DAM, EMBANKMENT, DIKE, SPILLWAY, OR CONTROL STRUCTURE ACTIVITIES (See Sample Drawing 15)

- If wetlands will be impacted, also complete Section 12.
- Attach site-specific conceptual plans for construction of a new *dam*, reconstruction of a *failed dam*, or enlargement of an existing *dam* for resource impact review. Detailed engineering plans are required once the activity has been determined to be permitable from an environmental standpoint.
- Attach detailed engineering plans for a *dam* repair, *dam alteration*, *dam abandonment*, or *dam* removal.

Which one best describes your project? ☐ new *dam* construction ☐ reconstruction of a *failed dam* ☐ enlargement of an existing *dam* ☐ *dam repair* ☐ *dam alteration* ☐ *dam abandonment* ☐ *dam* removal ☐ other

Dam ID Number If known

Type of outlet discharge *structure* ☐ surface ☐ bottom ☐ mid depth

Will proposed activities require a drawdown of the waterbody to complete the work? ☐ No ☐ Yes (If Yes, also complete Section 16)

Riprap Volume (cu yd)

Dredging/excavation Volume (cu yd)

Fill volume (cu yd)

Does *structure* allow complete drainage of waterbody? ☐ No ☐ Yes

Benchmark elevation (ft)

Datum used ☐ Local ☐ *NGVD 29* ☐ other

Describe benchmark and show on plans

Have you engaged the services of a Licensed Professional Engineer? ☐ No ☐ Yes (If Yes, name, registration number, and mailing address)

Will a water diversion during construction be required? ☐ No ☐ Yes (If Yes, describe how the stream flow will be controlled through the *dam* construction area during the proposed project activities)

- The following additional information is required for a new dam, reconstruction of a failed dam, or enlargement of an existing dam.

Describe the type of *dam* and how you will design the *dam* and embankment to control seepage through and underneath the *dam*.

Embankment top elevation (ft)

Streambed elevation at downstream embankment toe (ft)

Structural height (difference between embankment top elevation and streambed elevation at downstream embankment toe) (ft)

Embankment length (ft)

Embankment top width (ft)

Embankment bottom width (ft)

Embankment *slopes* (vertical / horizontal) Upstream Downstream

07-03-39-P

Revised

PROJECT NARRATIVE

To implement Baseline Environmental Assessment requirements, the new property owner (applicant) proposes to replace some existing wetlands vegetation with new wetland vegetation, excavate (clear and grub) and fill the existing Kalamazoo River bank, and place rip rap within the 100-year floodplain. The project site is located near the intersection of the Kalamazoo River and Farmer Street in Otsego. A total of 0.27 acres of wetland will be temporarily disrupted in order to clear and grub a portion of the existing river bank area wetlands prior to stabilization with geocell seeded with wetland seed mix. A total of 1750 cubic yards of riverbank will be excavated (cleared and grubbed and reshaped) within the 100-year floodplain in order to stabilize the river bank with geocell fill (800 cubic yards). Approximately 1900 cubic yards of rip rap will be placed below the 100 year floodplain elevation to protect the toe of the stabilized bank without compensating cut based on the results of hydraulic modeling. A small runoff control berm will be placed above the 100 year flood plain elevation (as determined by hydraulic modeling) at the top of the stabilized river bank and stabilized.

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PROJECT

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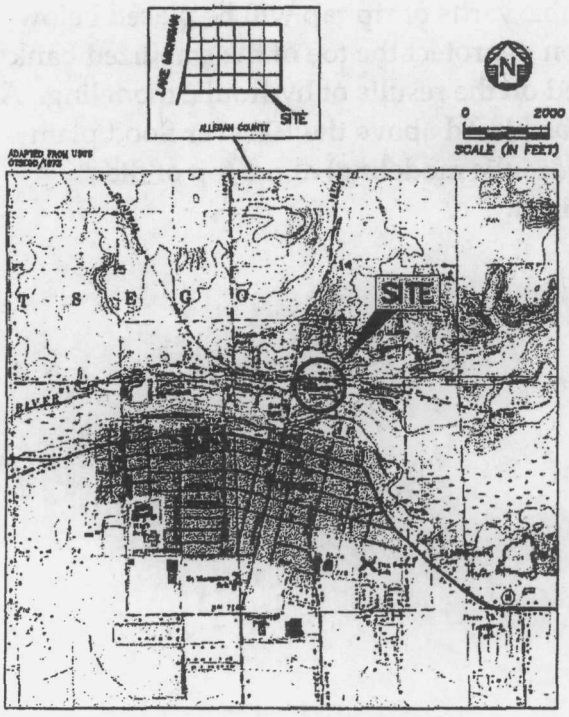

SITE LOCATION MAP

SECTION 23 T.1N.–R.12W.
OTSEGO TOWNSHIP
ALLEGAN COUNTY
OTSEGO, MICHIGAN

LISTING OF

1. EXISTING
2. WEST C
3. EAST C
4. CONSTR
5. SECTION

Land & Water Mgt. Div.

JUN 2 8 2007

Permit Consolidation Unit

PREPARED BY

ERM.

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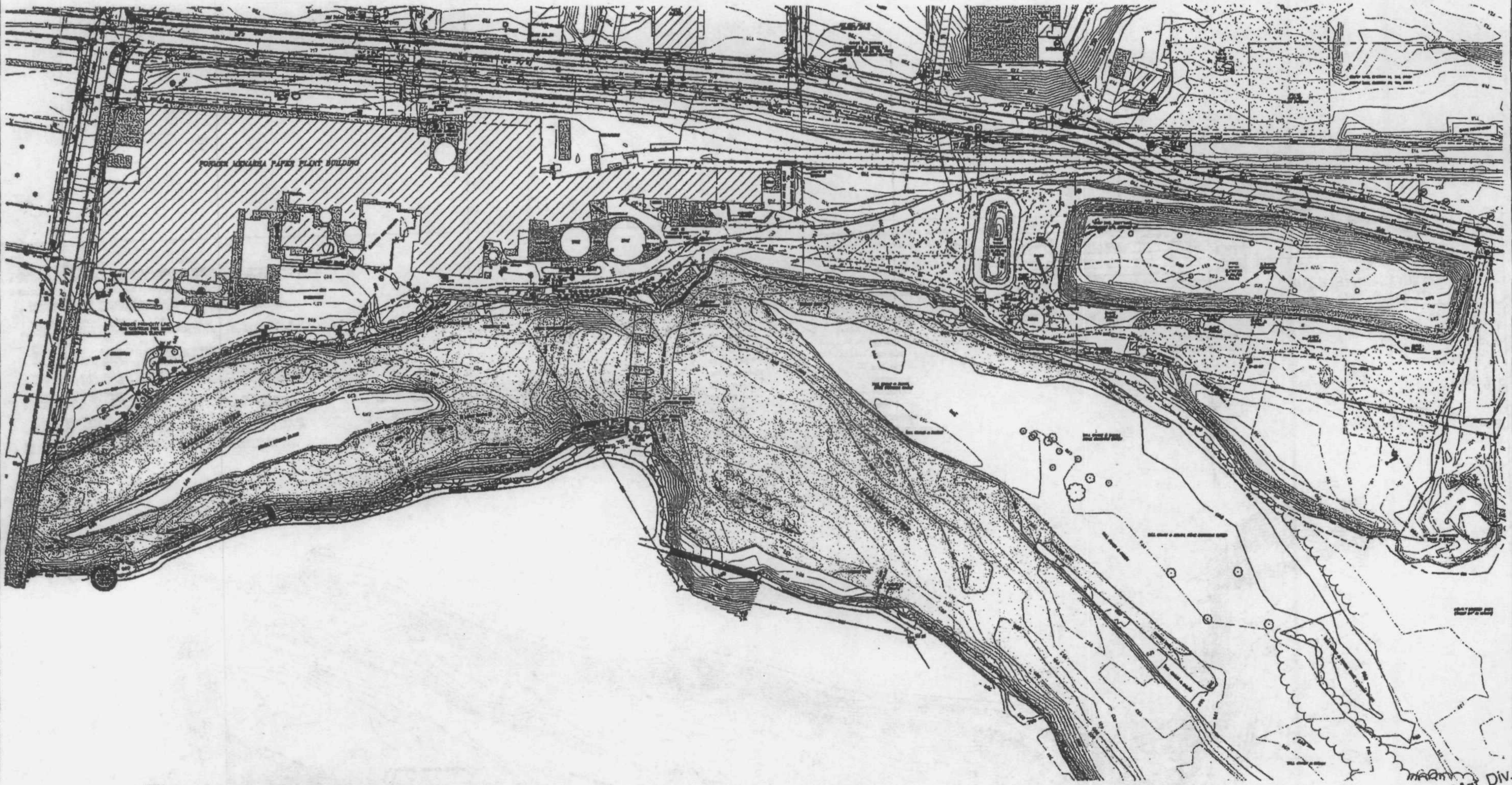


NOTES

1. UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTORS SHALL VERIFY/LOCATIONS OF ALL EXISTING STRUCTURES, UTILITY EASEMENTS, PIPES, INLETS, AND BOUNDARIES.
2. THE TOPOGRAPHICAL SURVEY WAS PREPARED BY [illegible] & ASSOCIATES, INC. AND IS REPRESENTATIVE OF THE SITE CONDITIONS AS OF THE SURVEY DATE, NOVEMBER 21, 2006. ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL BASED ON NGVD 29 DATUM REFERENCING [illegible] BENCHMARK # 170, OTSEGO HIGH SCHOOL, HAVING AN ELEVATION OF 716.80 FEET.
3. EXISTING CONTOUR LINES ARE PRESENTED IN 1-FOOT CONTOUR INTERVAL, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF FACILITY HEALTH AND SAFETY THROUGH CONSTRUCTION.
5. BENCHMARKS, MONUMENTS, STRUCTURES, UTILITIES, AND PROPERTY MARKERS SHALL BE PROTECTED AT ALL TIMES AND SHALL NOT BE DISTURBED BY CONSTRUCTION ACTIVITIES.
6. CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) AT LEAST THREE (3) DAYS PRIOR TO COMMENCEMENT OF WORK.
7. CONTRACTOR SHALL CONTACT OWNER FOR MARKING OF ONSITE UTILITIES.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE OF VEGETATED AREAS TO ONLY THAT REQUIRED TO PERFORM WORK.
9. THE 100-YEAR FLOOD PLAIN DELINEATION (ELEVATION NOT GIVEN) WAS OBTAINED FROM FLOOD INSURANCE RATE MAP [illegible] A, ALLEGAN COUNTY, DATED 30 SEPTEMBER [illegible]. A SECONDARY 100-YEAR FLOOD PLAIN DELINEATION (ELEVATION 700 FEET UPSTREAM OF DAM, [illegible] FEET DOWNSTREAM OF DAM) WAS OBTAINED FROM HYDRAULIC AND HYDROLOGIC MODELING SURVEY (KALAMAZOO RIVER AT OTSEGO, MI) PREPARED BY ERM, DATED 17 APRIL 2007.
10. PRIOR TO ANY EARTHWORK OR CLEARING ACTIVITIES, ALL EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED DOWN GRADIENT OF THE WORK AREA, REFERENCE SHEET NO. 2 AND 3. IF NECESSARY, THE CONTRACTOR SHALL EMPLOY ADDITIONAL EROSION CONTROLS.

LEGEND

LIGHT POLE
UTILITY POLE
GUY ANCHOR
CLEANOUT
STORM MANHOLE
SANITARY MANHOLE
VALVE (WATER & GAS)
CATCH BASIN
FIRE HYDRANT
TRANSFORMER
ELECTRIC MANHOLE
ELECTRIC METER
GAS METER
UTILITY RISER
SIGN (GENERAL)
POST
APPROXIMATE PROPERTY LINE
EXISTING 1-FOOT CONTOUR
EXISTING 5-FOOT CONTOUR
BOLLARD POST
FINISHED FLOOR ELEV. X790.50
SPOT ELEVATION 790.3
FENCE
ELECTRIC (OH)
ELECTRIC (UG)
TELEPHONE
FIBER OPTIC
GAS LINE
WATER LINE
SANITARY SEWER
STORM SEWER
LIMITS OF WORK AREA
100 YEAR FLOOD LEVEL (EPM)
FLOOD HAZARD AREA (FEMA)

N

0 50 100
SCALE (IN FEET)

Land & Water Mgt. Div.
JUN 29 2007

Rev.	Date	Description	By	Chk
Drawn by: KAK		Checked by:		

ERM

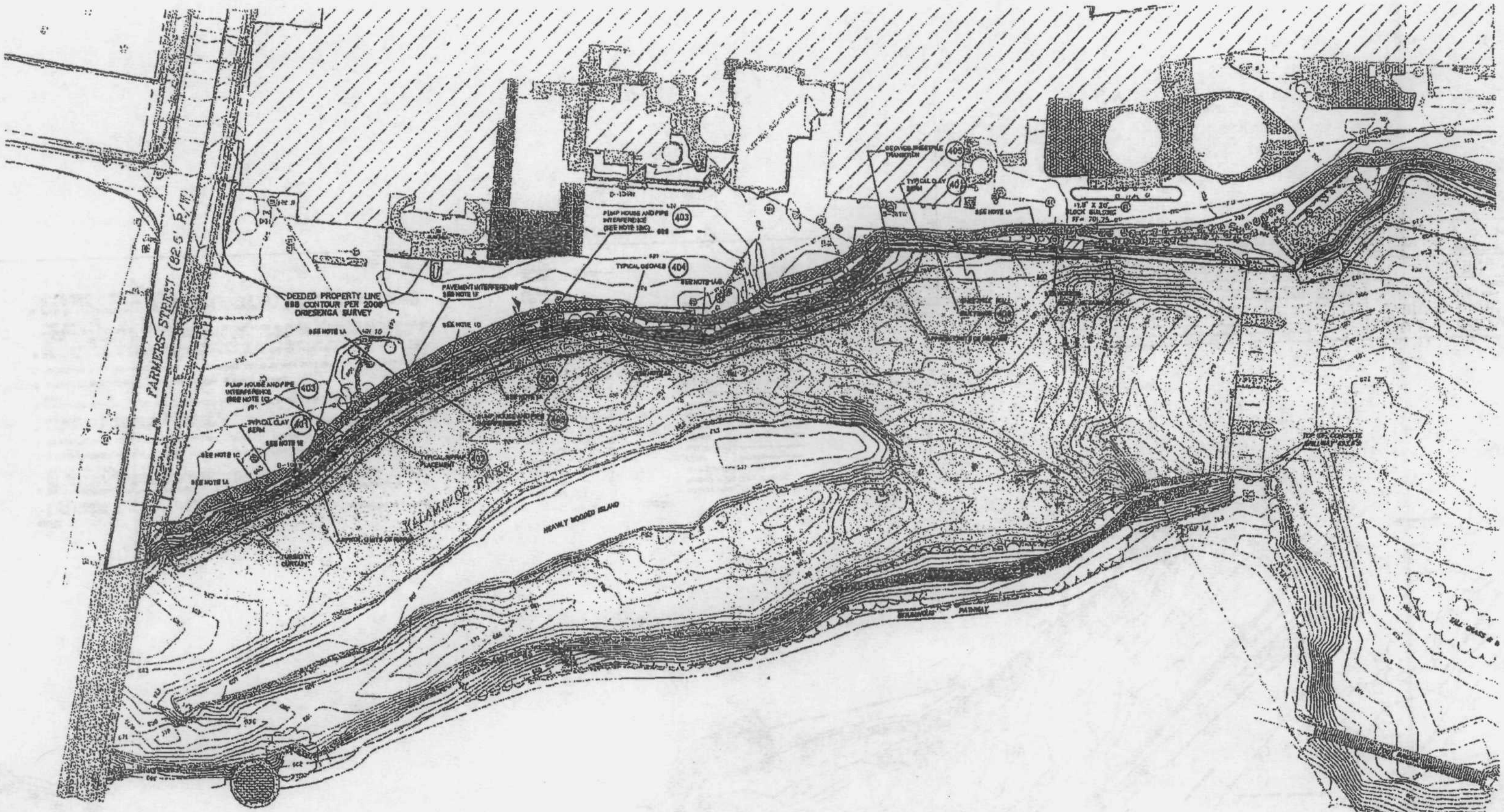
U.S. GYPSUM CORPORATION
RIVER BANK STABILIZATION
320 NORTH FARMER STREET
OTSEGO, MICHIGAN

EXISTING CONDITIONS

Scale	Project Number	Sheet	Rev.
1"=50'	0063429	1	
Date 6/15/07			

Environmental Resources Management

Reduced
See file



NOTES:

1. THE CONTRACTOR SHALL BE AWARE OF ALL EXISTING OBSTRUCTIONS THAT OCCUPY AREA WITHIN THE PROPOSED WORK AREA. THE OBSTRUCTIONS SHALL BE MANAGED AS SPECIFIED BELOW
   - A. UTILITY POLES SHALL REMAIN IN PLACE. IF REGRADING REQUIRES CUT, UTILITY POLES SHALL BE STABILIZED WITH A 2 FOOT CONCRETE BASE, OTHERWISE FILLED AROUND. GUY WIRES SHALL BE REMOVED AND REATTACHED FOLLOWING INSTALLATION AND SEEDING OF GEOWEB INFILL.
   - B. MANHOLES SHALL BE AVOIDED WHERE POSSIBLE WITH MINOR DEVIATIONS IN THE BERM OR CUTS IN GEOWEB, AS DIRECTED BY THE ENGINEER. OTHERWISE EXTENSIONS SHALL BE ADDED TO THE MANHOLES UP TO THE PROPOSED SURFACE ELEVATION.
   - C. SIGNS SHALL BE RELOCATED AS REQUIRED BY THE PROPOSED RIVER BANK STABILIZATION PLAN AND RELOCATED WITHIN THE VICINITY IN AN OWNER AND/OR ENGINEER APPROVED LOCATION.
   - D. ALL ELECTRICAL AREAS SHALL BE SURFACE MARKED PRIOR TO EXCAVATION ACTIVITIES. WIRES SHALL BE TAGGED OUT IF EXCAVATION OR CUTTING IS REQUIRED WITHIN 10 FEET OF THE MARKINGS. WIRES SHALL BE RELOCATED AS REQUIRED IN THE IMMEDIATE AREA FOLLOWING REGRADING, AS DIRECTED BY THE ENGINEER.
   - E. THE MARKED MONITORING WELL SHALL REMAIN IN PLACE. CLEARING, GRUBBING AND GEOWEB INSTALLATION SHALL PROCEED WITH CARE TO PREVENT DAMAGE TO WELL. GEOWEB SHALL BE CUT AND INSTALLED AROUND THE WELL.
   - F. PAVEMENT SHALL BE SAW CUT AND REMOVED DOWN TO BASE IMMEDIATE IN LOCATIONS OF PROPOSED CUT, EXCAVATION, OR THE PROPOSED CLAY BERM.
2. SEE DRAWING NO. 1 FOR GENERAL NOTES AND LEGEND.
3. THE CONTRACTOR SHALL REGRADE THE RIVER BANK TO A MAXIMUM SLOPE OF 3H:1V, USING THE AVERAGE WATER LINE AS THE TOE. THE DELINEATED REGRADED RIVER BANK CREST IS AN APPROXIMATION BASED ON THESE REQUIREMENTS.
4. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE WITHIN THE WORK AREA AS PRESENTED ON THESE DRAWINGS. DISTURBANCE OF ANY OTHER AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
5. EXISTING VEGETATION, TREES, AND SHRUBBERY SHALL ONLY BE CLEARED AND GRUBBED IN THE DESIGNATED WORK AREAS, UNLESS APPROVED BY THE ENGINEER.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AND SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING CONSTRUCTION. ADJUSTMENTS SHALL BE MADE AS NECESSARY, AS DIRECTED BY THE ENGINEER.

LEGEND

LIGHT POLE	FINISHED FLOOR ELEVATION
UTILITY POLE	SPOT ELEVATION
GUY ANCHOR	FENCE
CLEANOUT	ELECTRIC (OH)
STORM MANHOLE	ELECTRIC (UG)
SANITARY MANHOLE	TELEPHONE
VALVE (WATER & GAS)	FIBER OPTIC
CATCH BASIN	GAS LINE
FIRE HYDRANT	WATER LINE
TRANSFORMER	SANITARY SEWER
ELECTRIC MANHOLE	STORM SEWER
ELECTRIC METER	PROPOSED BERM
GAS METER	100 YEAR FLOOD LEVEL
UTILITY RISER	SILT FENCE
SIGN (GENERAL)	TURBIDITY CURTAIN
POST	APPROXIMATE LIMITS OF RIP/RAP
BOLLARD POST	APPROXIMATE LIMITS OF GEOWEB

Land & Water Mgt. Div.
JUN 2 8 2007
Permit Consolidation Unit

Rev.	Date	Description	By	Chk

Drawn by: FAK | Chkd by: | Checked by: MJB

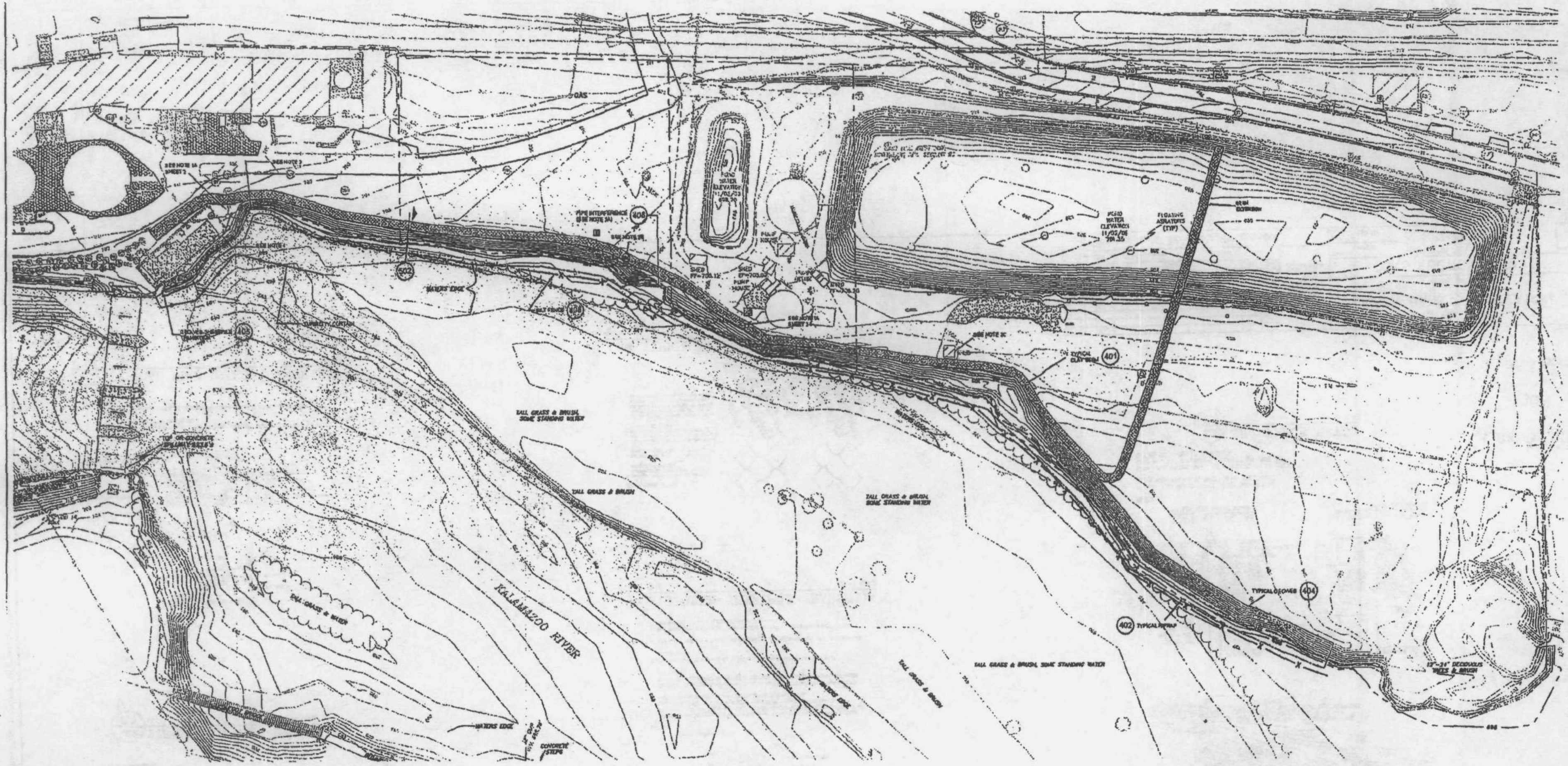
Environmental Resources Management

ERM

U.S. GYPSUM
RIVER BANK STABILIZATION
OTSEGO, MICHIGAN

WEST CONSTRUCTION PLAN

Scale	Project Number	Sheet	Rev.
1"=50'	0063429	2	
Date: 4/30/07			



NOTES:

1. SEE DRAWING NO. 1 FOR GENERAL NOTES AND LEGEND.
2. THE CONTRACTOR SHALL BE AWARE OF ALL EXISTING OBSTRUCTIONS THAT OCCUPY AREA WITHIN THE PROPOSED WORK AREA. THE OBSTRUCTIONS SHALL BE MANAGED AS SPECIFIED BELOW.
   A. THE SHEAR FACE SHALL BE FILLED IN TO MATCH THE SURROUNDING SLOPE OF THE RIVER BANK. A PIPE COLLAR SHALL BE ADDED TO THE EXISTING SEWER PIPE AND EXTENDED AS NECESSARY TO PROTRUDE BY A MINIMUM OF 6 INCHES FROM THE REGRADED SLOPE.
   B. MANHOLES SHALL BE AVOIDED WHERE POSSIBLE WITH MINOR DEVIATIONS IN THE BERM OR CUTS IN GEOWEB AS DIRECTED BY THE ENGINEER, OTHERWISE EXTENSIONS SHALL BE ADDED TO THE MANHOLES UP TO THE PROPOSED SURFACE ELEVATION.
   C. THE PROPOSED CLAY BERM SHALL NOT AT ANY POINT CONTACT THE SIDE OF THE EXISTING SHED.
3. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE INTAKE STRUCTURE AND ASSOCIATED EXPOSED PIPING. THE REMAINING PIPING SHALL BE CAPPED.
4. IN LOCATIONS WHERE THE GEOCELL IS NOT ADJACENT TO THE CLAY BERM, REMOVAL EXISTING SOIL AS NECESSARY SUCH THAT THE TOP EDGE OF THE GEOCELL IS INSTALLED FLUSH WITH THE EXISTING SURFACE.
5. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE WITHIN THE WORK AREA AS PRESENTED ON THESE DRAWINGS. DISTURBANCE OF ANY OTHER AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
6. EXISTING VEGETATION, TREES, AND SHRUBBERY SHALL ONLY BE CLEARED AND GRUBBED IN THE DESIGNATED WORK AREAS, UNLESS APPROVED BY THE ENGINEER.
7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AND SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING CONSTRUCTION. ADJUSTMENTS SHALL BE MADE AS NECESSARY, AS DIRECTED BY THE ENGINEER.

SEQUENCE OF CONSTRUCTION:

THE FEATURES SHOWN ON THESE DRAWINGS SHALL BE CONSTRUCTED ACCORDING TO THE SEQUENCE PRESENTED BELOW, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

1. INSTALL SEDIMENT AND EROSION CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO SILT FENCE AND TURBIDITY CURTAIN.
2. CLEAR AND GRUB VEGETATION ONLY AS REQUIRED TO PERFORM PROJECT WORK.
3. REGRADE RIVER BANK SLOPE AS NECESSARY TO PROVIDE THE MINIMUM REQUIRED SLOPE AND ASSOCIATED ACTIVITIES, INCLUDING BUT NOT LIMITED TO REMOVAL OF EXISTING ASPHALT, WHERE NEEDED.
4. INSTALL RIPRAP, GEOWEB, GEOWEB INFILL AND EROSION MAT COVER SYSTEM OVER REGRADED RIVERBANK.
5. INSTALL CLAY BERM AT REGRADED RIVER BANK CREST.
6. ALL DISTURBED SOILS AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
7. AFTER INSTALLATION WORK IS COMPLETED AND ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED, EROSIONS CONTROLS SHALL BE REMOVED, AS APPROVED BY THE ENGINEER. REMOVAL OF THE TURBIDITY CURTAIN MAY REQUIRE REMOVAL OF EXCESS DEPOSITED SEDIMENT, AS DIRECTED BY THE ENGINEER.

LEGEND

LIGHT POLE	FINISHED FLOOR ELEVATION
UTILITY POLE	SPOT ELEVATION
GUY ANCHOR	FENCE
CLEANOUT	ELECTRIC (OH)
STORM MANHOLE	ELECTRIC (UG)
SANITARY MANHOLE	TELEPHONE
VALVE (WATER & GAS)	FIBER OPTIC
CATCH BASIN	GAS LINE
FIRE HYDRANT	WATER LINE
TRANSFORMER	SANITARY SEWER
ELECTRIC MANHOLE	STORM SEWER
ELECTRIC METER	PROPOSED BERM
GAS METER	100 YEAR FLOOD LEVEL
UTILITY RISER	SILT FENCE
SIGN (GENERAL)	TURBIDITY CURTAIN
POST	APPROXIMATE LIMITS OF RIP/RAP
BOLLARD POST	APPROXIMATE LIMITS OF GEOWEB

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SCALE (IN FEET)

Land & Water Mgt. Div
JUN 2 8 2007
Permit Consolidation Unit

Rev.	Date	Description	By	Chk

DRAWN BY FAK | DESIGNED BY [illegible] | CHECKED BY [illegible]

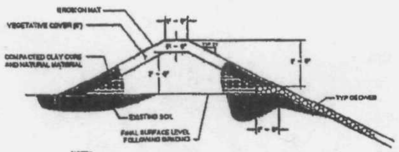
Environmental Resources Management

ERM

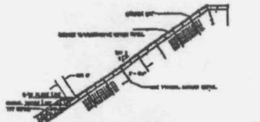
U.S. GYPSUM
RIVER BANK STABILIZATION
OTSEGO, MICHIGAN

EAST CONSTRUCTION PLAN

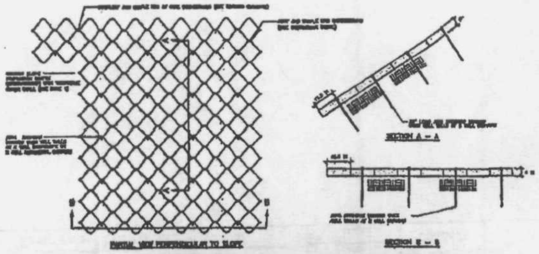
SCALE	PROJECT NUMBER	SHEET	REV.
1"=50'	0063428	3	
DATE 4/26/07			



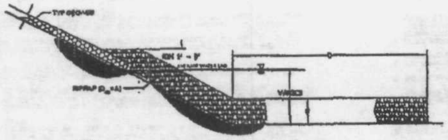
401 / 2,3 TYPICAL CLAY BERM DETAIL
NOT TO SCALE



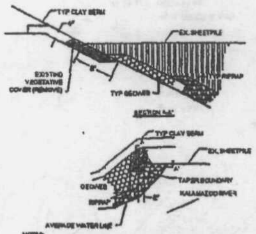
404 / 2,3 TYPICAL GEOWEB DETAIL
NOT TO SCALE



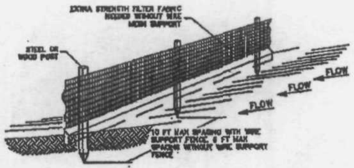
407 / 4 TYPICAL ANCHOR DETAIL
NOT TO SCALE

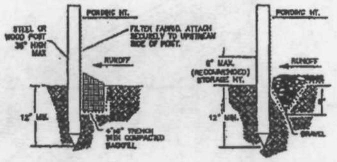


402 / 2,3 TYPICAL RIP/RAP DETAIL
NOT TO SCALE

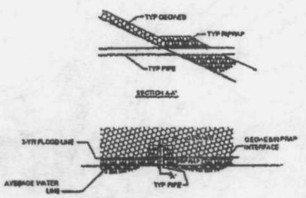


405 / 2,3 GEOWEB-SHEETPILE TRANSITION
NOT TO SCALE





408 / 2,3 SILT FENCE DETAIL
NOT TO SCALE



403 / 2,3 TYPICAL PIPE INTERFERENCE DETAIL
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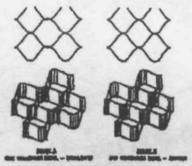

406 / 4 TYPICAL GEOWEB CONNECTION DETAIL
NOT TO SCALE

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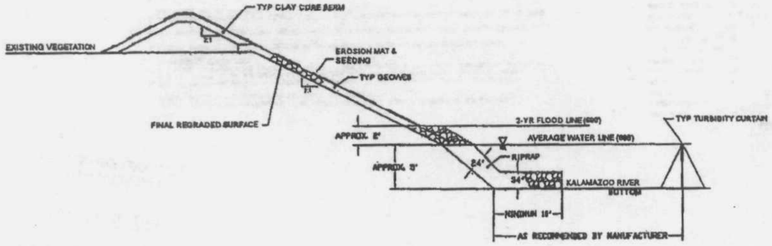
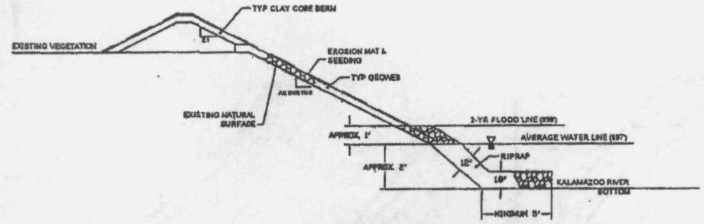
ERM.	U.S. GYPSUM RIVER BANK STABILIZATION
	CONSTRUCTION DETAILS
Environmental Resources Management	NOTED · 0063429 · 4



501/2 RIVER BANK SECTION
NOT TO SCALE



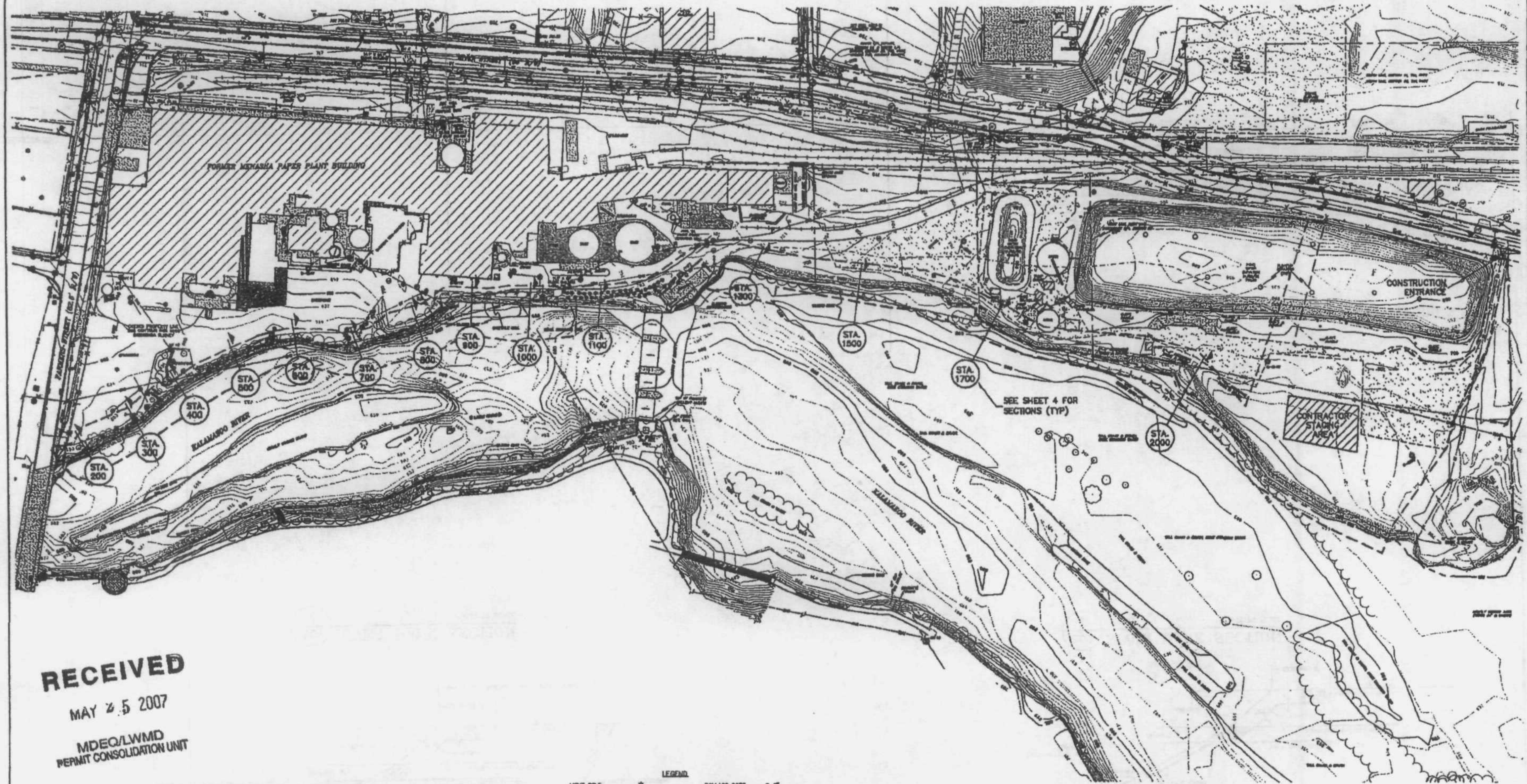
502/3 RIVER BANK SECTION
NOT TO SCALE

Land & Water Mgt. Div.

JUN 2 8 2007

Permit Consolidation Unit

ERM	U.S. GYPSUM RIVER BANK STABILIZATION OTSEGO, MICHIGAN
Environmental Resources Management	SECTIONS
	NOTED · 0063429 · 5



NOTES

1. UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTORS SHALL VERIFY/LOCATIONS OF ALL EXISTING STRUCTURES, UTILITY EASEMENTS, PIPES, INLETS, AND BOUNDARIES.
2. THE TOPOGRAPHICAL SURVEY WAS PREPARED BY DRESENDA & ASSOCIATES, INC. AND IS REPRESENTATIVE OF THE SITE CONDITIONS AS OF THE SURVEY DATE, NOVEMBER 21, 2006. ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL BASED ON NGVD 29 DATUM REFERENCING NGS BENCHMARK N 170, OTSEGO HIGH SCHOOL, HAVING AN ELEVATION OF 718.90 FEET.
3. EXISTING CONTOUR LINES ARE PRESENTED IN 1-FOOT CONTOUR INTERVAL, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF FACILITY HEALTH AND SAFETY THROUGH CONSTRUCTIONS.
5. BENCHMARKS, MOVEMENTS, STRUCTURES, UTILITIES, AND PROPERTY MARKERS SHALL BE PROTECTED AT ALL TIMES AND SHALL NOT BE DISTURBED BY CONSTRUCTION ACTIVITIES.
6. CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) AT LEAST THREE (3) DAYS PRIOR TO COMMENCEMENT OF WORK.
7. CONTRACTOR SHALL CONTACT OWNER FOR MARKET OF OWNER UTILITIES.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE OF VEGETATED AREAS TO ONLY THAT REQUIRED TO PERFORM WORK.
9. CONTRACTOR SHALL ENTER THE SITE USING THE ILLUSTRATED INGRESS/EGRESS ROUTE.
10. THE 100-YEAR FLOOD PLAIN DELINEATION (ELEVATION NOT GIVEN) WAS OBTAINED FROM FLOOD INSURANCE RATE MAP 260740002B A, ALLEGAN COUNTY, DATED 30 SEPTEMBER 1986. A SECONDARY 100-YEAR FLOOD PLAIN DELINEATION (ELEVATION 790 FEET UPSTREAM OF DAM, 693 FEET DOWNSTREAM OF DAM) WAS OBTAINED FROM HYDRAULIC AND HYDROLOGIC MODELING SURVEY (KALAMAZOO RIVER AT OTSEGO, MI) PREPARED BY ERM, DATED 17 APRIL 2007.
11. PRIOR TO ANY EARTHWORK OR CLEARING ACTIVITIES, ALL EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED DOWN GRADIENT OF THE WORK AREA; REFERENCE DRAWING NO. 2 AND 3. IF NECESSARY, THE CONTRACTOR SHALL EMPLOY ADDITIONAL EROSION CONTROLS.

LEGEND

LIGHT POLE
UTILITY POLE
GUY ANCHOR
CLEANOUT
STORM MANHOLE
SANITARY MANHOLE
VALVE (WATER & GAS)
CATCH BASIN
FIRE HYDRANT
TRANSFORMER
ELECTRIC MANHOLE
ELECTRIC METER
GAS METER
UTILITY RISER
SIGN (GENERAL)
POST
APPROXIMATE PROPERTY LINE
EXISTING 1-FOOT CONTOUR
EXISTING 5-FOOT CONTOUR
BOLLARD POST
FINISHED FLOOR ELEV. X799.06
SPOT ELEVATION 799.5
FENCE
ELECTRIC (OH)
ELECTRIC (UG)
TELEPHONE
FIBER OPTIC
GAS LINE
WATER LINE
SANITARY SEWER
STORM SEWER
INGRESS/EGRESS ROUTE
LIMITS OF WORK AREA
100 YEAR FLOOD LEVEL (ERM)
FLOOD HAZARD AREA (FEMA)

SCALE (IN FEET) 0 50 100

N

Rev.	Date	Description	By	Chk

DRAWN BY FAK | DATA Review [illegible] | CHECKED BY [illegible]

ERM.

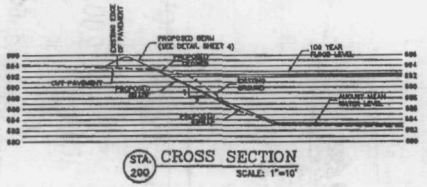
Environmental Resources Management

U.S. GYPSUM CORPORATION
RIVER BANK STABILIZATION
320 NORTH FARMER STREET
OTSEGO, MICHIGAN

EXISTING CONDITIONS

SCALE	PROJECT NUMBER	SHEET	REV.
1"=50'	0083429	1	
DATE 5/16/07			

R:\CADD\Crt\U-Z\U.S. Gypsum Corporation\0083429-04-01\0083429-10.dwg, Existing Conditions, 5/24/2007 8:37:10 AM, FAK



STA. 200 CROSS SECTION
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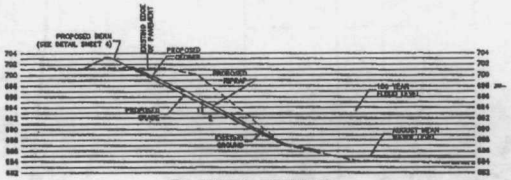

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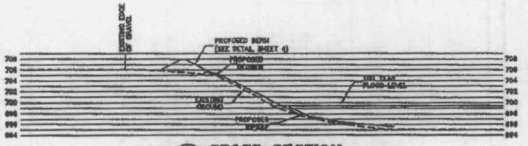

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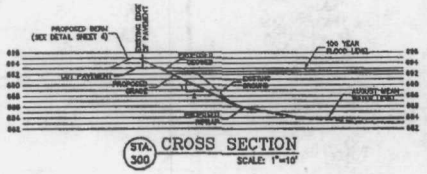

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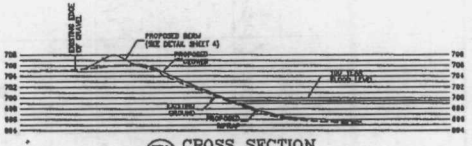

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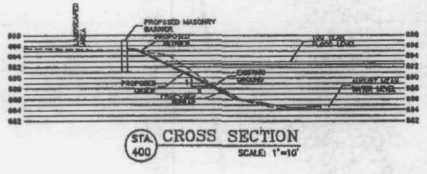

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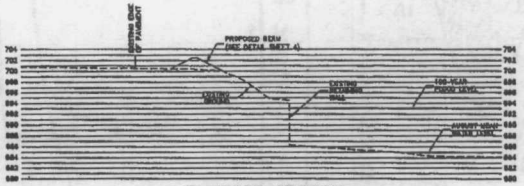

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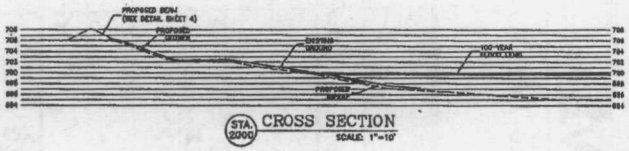

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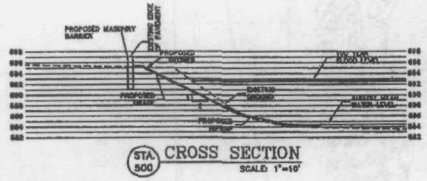

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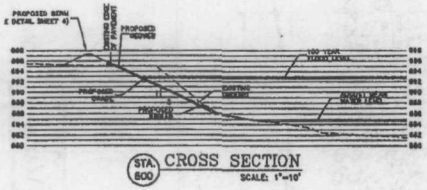

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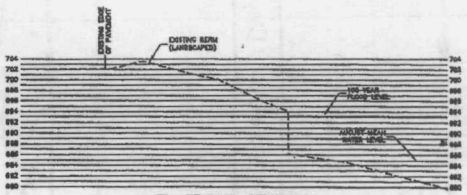

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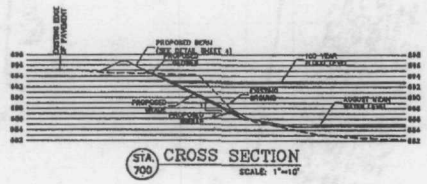

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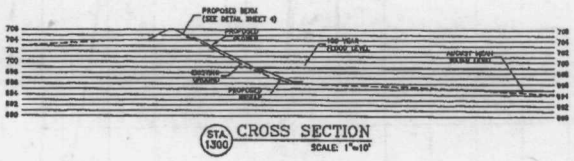

STA. 1300 CROSS SECTION
SCALE: 1"=10'

Rev.	Date	Description	By	Ck

Environmental Resources Management

U.S. GYPSUM
RIVER BANK STABILIZATION
OTSEGO, MICHIGAN

CROSS SECTIONS

DRAWN BY	CHKD Author	CHKR	CHECKED BY
FAK			MJS

SCALE	PROJECT NUMBER	SHEET	REV.
1"=10'	0063429	4	
DATE 4/30/07			

Environmental Resources Management, Inc.

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Holland, MI 49424-9263
(616) 399-3500
(616) 399-3777 (fax)

ERM®

JOB 07-03-0039-P
SHEET NO. 1 OF 1
CALCULATED BY MJB DATE 6/27/07
CHECKED BY DATE
SCALE None